

THE SUBTERRANEAN ORGANS OF CINNA ARUNDINACEA.

AGNES CHASE.

(Plate 85.)

IN October of 1910, Mr. Thomas L. Cooper of Decatur, Georgia, sent to the Department of Agriculture a box containing clusters of moniliform underground organs with young plants attached by thread-like rootstocks. These were identified as belonging to some grass, the "bulbs" being much swollen and greatly shortened internodes, the constricted portion being the node, but we knew of no grass having such an underground habit. When shown the specimens on his return from Mexico Prof. Hitchcock suggested *Cinna arundinacea* L. as the species producing the curious organs. Herbarium specimens of this species showed many of the culms to have slightly swollen bases.

Late in November a colony of *Cinna* in Virginia near the Potomac River was visited and specimens secured with clustered culms, each with a swollen corm-like base, as in *Panicum bulbosum*, and, less conspicuously, in several species of *Melica*. These swollen bases consisted of one to three (mostly one) internodes, constricted at the node above and below. No moniliform organs were found, but the soil was a heavy clay and it is possible the delicate connecting runners were broken, nor was the colony a large one. The specimens secured, however, served to identify the species with those sent from Georgia. A second supply of the underground organs attached to more developed plants was kindly sent by Mr. Cooper in December. The soil surrounding them was loose and sandy which may account either for the great development of these organs or for their being obtained attached to the plants.

These may be regarded as corms, constricted at the joints. They consist of two to five joints, 5 to 10 mm. in the greatest diameter, and produce rootlets and rootstocks or runners from the nodes. It is not certain how these moniliform corms are formed but they would seem to be the bases of old culms from which the aerial portion has entirely disappeared, since each is tipped by a very hard remnant of apparently an unswollen joint. Sometimes two or three of these moniliform corms are united in a cluster by very short rootstocks.

In cross section these are shown to have a loosely cellular structure, consisting of thin-walled parenchyma, with a few slender, scarcely lignified vascular bundles interspersed. Mr. C. S. Hudson examined these corms and states that they contain no starch. We have not as yet obtained a sufficient quantity to enable him to determine the chemical nature of the cell contents.

The connecting rootstocks or runners are 3 to 10 or 15 cm. long, about 1 mm. thick, obscurely angled, with irregular internodes, and sparingly branching or simple. The thin scales are often reduced to shreds.

The illustration shows one of the moniliform corms with runners connecting it to young plants. Two very young buds may be seen at the nodes and a third short runner with a slightly swollen internode at the end.

The habit here shown is unlike that of any grass so far as we know, *Panicum bulbosum* H. B. K. most nearly approximating it. At first sight these moniliform corms suggest some pathological condition or that the swellings may be occupied by nematodes but a dozen or more of these corms were dissected without finding either worms or diseased tissue.

It would be greatly appreciated if local botanists will examine colonies of either species of *Cinna* for these subterranean organs and send specimens fresh if possible to the writer at the Department of Agriculture.

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ERUCASTRUM POLLICHII ADVENTIVE IN AMERICA.

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THE difficulty which has been experienced in ascertaining the precise dates and places at which some European plants, such as *Lactuca Scariola* L., *Sisymbrium altissimum* L., *Brassica juncea* (L.) Cosson., etc., now widely distributed as weeds in America, first reached our continent, suggests the desirability of putting promptly on record the appearance of such related species as may be discovered getting a foothold upon American soil, for these also may in future become equally important elements in our flora.